In the Claims:

Claim 1. (Currently Amended) A method of improving embryo implantation, the method comprising contacting an embryo with an effective amount of ~~mammaliana~~ purified recombinant heparanase having at least 95% homology to ~~heparanase~~ SEQ ID NO:1 and implanting the embryo in a receptive uterus.

Claim 2. (Currently Amended) The method of claim 1, wherein said ~~mammalian~~recombinant heparanase is a mature heparanase.

Claim 3. (Currently Amended) The method of claim 1, wherein said ~~mammalian~~recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 4. (Currently Amended) The method of claim 1, wherein contacting the embryo with an effective amount of ~~mammalian~~said recombinant heparanase is in vitro.

Claim 5. (Currently Amended) The method of claim 1, wherein contacting the embryo with an effective amount of ~~mammalian~~said recombinant heparanase is in utero.

Claim 6. (Cancelled)

Claim 7. (Currently Amended) A method of improving embryo implantation, the method comprising contacting a receptive uterus with an effective amount of ~~mammaliana~~ purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and implanting the embryo in the receptive uterus.

Claim 8. (Currently Amended) The method of claim 7, wherein said ~~mammalian~~recombinant heparanase is a mature heparanase.

Claim 9. (Currently Amended) The method of claim 7, wherein said ~~mammalian~~recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 10. (Cancelled)

Claim 11. (Currently Amended) The method of claim 7, wherein contacting the receptive uterus with the effective amount of ~~mammalian~~said recombinant heparanase precedes implanting the embryo in the receptive uterus.

Claim 12. (Currently Amended) The method of claim 7, wherein contacting the receptive uterus with the effective amount of ~~mammalian~~said recombinant heparanase is concurrent to implanting the embryo in the receptive uterus.

Claim 13. (Currently Amended) A method of improving embryo implantation, the method comprising contacting a receptive uterus with an effective amount of ~~mammaliana~~ purified recombinant heparanase having at least 95% homology to SEQ ID NO:1, contacting an embryo with an effective amount of ~~mammalian~~said recombinant heparanase and implanting the embryo in the receptive uterus.

Claim 14. (Currently Amended) The method of claim 13, wherein said ~~mammalian~~recombinant heparanase is a mature heparanase.

Claim 15. (Currently Amended) The method of claim 13, wherein said ~~mammalian~~recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 16. (Currently Amended) The method of claim 13, wherein contacting the embryo with an effective amount of ~~mammalian~~ said recombinant heparanase is in vitro.

Claim 17. (Currently Amended) The method of claim 13, wherein contacting the embryo with an effective amount of ~~mammalian~~ said recombinant heparanase is in utero.

Claim 18. (Cancelled)

Claim 19. (Currently Amended) The method of claim 13, wherein contacting the receptive uterus with the effective amount of ~~mammaliansaid~~ recombinant heparanase precedes implanting the embryo in the receptive uterus.

Claim 20. (Currently Amended) The method of claim 13, wherein contacting the receptive uterus with the effective amount of ~~mammaliansaid~~ recombinant heparanase is concurrent to implanting the embryo in the receptive uterus.

Claim 21. (Currently Amended) A method of improving in vitro fertilization (IVF) embryo implantation, the method comprising contacting an embryo generated via IVF with an effective amount of ~~mammaliana~~ purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and implanting the embryo in a receptive uterus.

Claim 22. (Currently Amended) The method of claim 21, wherein said ~~mammalian~~recombinant heparanase is a mature heparanase.

Claim 23. (Currently Amended) The method of claim 21, wherein said ~~mammalian~~recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 24. (Currently Amended) The method of claim 21, wherein contacting the embryo generated via IVF with an effective amount of ~~mammaliansaid~~ recombinant heparanase is in vitro.

Claim 25. (Currently Amended) The method of claim 21, wherein contacting the embryo generated via IVF with an effective amount of ~~mammalian~~said recombinant heparanase is in utero.

Claim 26. (Currently Amended) A method of improving IVF embryo implantation, the method comprising contacting a receptive uterus with an effective amount of ~~mammaliana~~ purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and implanting the embryo generated via IVF in the receptive uterus.

Claim 27. (Currently Amended) The method of claim 26, wherein said ~~mammalian~~recombinant heparanase is a mature heparanase.

Claim 28. (Currently Amended) The method of claim 26, wherein said ~~mammalian~~recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 29. (Currently Amended) The method of claim 26, wherein contacting the receptive uterus with the effective amount of ~~mammalian~~said recombinant heparanase precedes implanting the embryo generated via IVF in the receptive uterus.

Claim 30. (Currently Amended) The method of claim 26, wherein contacting the receptive uterus with the effective amount of ~~mammalian~~said recombinant heparanase is concurrent to implanting the embryo generated via IVF in the receptive uterus.

Claim 31. (Currently Amended) A method of improving IVF embryo implantation, the method comprising contacting a receptive uterus with an effective amount of ~~mammaliana~~ purified recombinant heparanase having at least 95% homology to SEQ ID NO:1, contacting an embryo generated via IVF with an

effective amount of ~~mammaliansaid~~ recombinant heparanase and implanting the embryo generated via IVF in the receptive uterus.

Claim 32. (Currently Amended) The method of claim 31, wherein said ~~mammalian~~ recombinant heparanase is a mature heparanase.

Claim 33. (Currently Amended) The method of claim 31, wherein said ~~mammalian~~ recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 34. (Currently Amended) The method of claim 31, wherein contacting the embryo generated via IVF with an effective amount of ~~mammaliansaid~~ recombinant heparanase is in vitro.

Claim 35. (Currently Amended) The method of claim 31, wherein contacting the embryo generated via IVF with an effective amount of ~~mammaliansaid~~ recombinant heparanase is in utero.

Claim 36. (Currently Amended) The method of claim 31, wherein contacting the receptive uterus with the effective amount of ~~mammaliansaid~~ recombinant heparanase precedes implanting the embryo generated via IVF in the receptive uterus.

Claim 37. (Currently Amended) The method of claim 31, wherein contacting the receptive uterus with the effective amount of ~~mammaliansaid~~ recombinant heparanase is concurrent to implanting the embryo generated via IVF in the receptive uterus.

Claim 38. (Withdrawn) An embryo coated with exogenous heparanase.

Claim 39. (Withdrawn) The embryo of claim 38, wherein said

heparanase is a mature heparanase.

Claim 40. (Withdrawn) The embryo of claim 38, wherein said heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 41. (Withdrawn) The embryo of claim 38, between 2 cells and a blastocyst.

Claim 42. (Withdrawn) A pharmaceutical composition comprising, as an active ingredient, an effective amount of heparanase, the pharmaceutical composition is designed for intra-uterine application.

Claim 43. (Withdrawn) The pharmaceutical composition of claim 42, wherein said heparanase is a mature heparanase.

Claim 44. (Withdrawn) The pharmaceutical composition of claim 42, wherein said heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 45. (Withdrawn) A pharmaceutical composition comprising, as an active ingredient, an effective amount of heparanase, the pharmaceutical composition is designed for application to an embryo in vitro.

Claim 46. (Withdrawn) The pharmaceutical composition of claim 45, wherein said heparanase is a mature heparanase.

Claim 47. (Withdrawn) The pharmaceutical composition of claim 45, wherein said heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 48. (Withdrawn) An embryo growth composition comprising an effective amount of nutrients for embryonic growth and an effective amount of heparanase for assisting in embryo implantation.

Claim 49. (Withdrawn) The embryo growth composition of claim 48, wherein said heparanase is a mature heparanase.

Claim 50. (Withdrawn) The embryo growth composition of claim 48, wherein said heparanase is a pro-heparanase, cleavable into mature heparanase.